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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Mahito Nunomura

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EXAMINER

CHENG, JACQUELINE

ART UNIT

PAPER NUMBER

3777

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,032	Applicant(s) NUNOMURA ET AL.	
	Examiner JACQUELINE CHENG	Art Unit 3777	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/30/10.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-7 and 10-12 is/are rejected.
- 7) ☒ Claim(s) 4,8 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Terminal Disclaimer

2. The terminal disclaimer filed on June 30, 2010 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 7,001,355 B2 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Akisada (US 6,183,426 B1) in view of Tetsuya (JP 7-59197). Akisada discloses a device to apply ultrasound to the skin comprising a housing (fig. 1 element 10), a driver circuit (fig. 1 element 20), a vibrator element (fig. 1 element 11), a horn (fig. 1 element 12) that is formed as an integral part with a rim (fig. 13 element 16E) creating a cavity (restrictor) (fig. 13 area between element 11E and 150) and carrying the vibrator on a mounting face which is capable of giving a first

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electrically equivalent impedance when loaded by the skin, and a second impedance when unloaded, a load detecting circuit (fig. 1 element 40) which is capable of providing a signal when detecting load, a control circuit (fig. 1 element 80) which is capable of stopping or reducing the driver circuit when the load detection is not received within a predetermined time period, and a motion detecting circuit (fig. 1 element 50) which is capable of monitoring movement of the vibration element (abstract). The ultrasonic device comprises a combined vibration mass as shown in fig. 13 comprising a structure 150 that restrains vibrations at a center portion (structure 150 is a ring, having a center hole). Akisda does not disclose the particulars of how the vibrational element 11 is configured. It would therefore be obvious to one skilled in the art to use any well know vibrational element such as disclosed by Tetsuya. Tetsuya discloses a vibrational element comprising a piezoelectric element (fig. 1 element 10) in the form of a circular disc having flat upper and lower end faces, and upper (fig. 1 element 21) and lower (fig. 1b element 22) electrodes deposited on the upper and lower end faces wherein an electric pulse is applied across the upper and lower electrode to actuate the vibrational element. It would be obvious to add the vibrational element of Tetsuya to Akisda for the purpose of preventing the production of an ultrasonic wave in an undesired mode (abstract of Tetsuya).

5. **Claims 10 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Akisda in view of Tetsuya as applied to claim 1 above, and further in view of Ohba (US 2003/0032899 A1). Akisda and Tetsuya disclose the claimed invention except for wherein the upper electrode is covered on its center with a silicone rubber elastic member. Ohba discloses an upper electrode that is covered on its center with a dampening member (fig. 14b element 6). Ohba does not

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explicitly disclose what the dampening member is created from. It would be obvious to use any well known material that dampens ultrasonic vibrations such as silicon rubber (paragraph 0069).

6. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Akisda in view of Tetsuya as applied to claim 1 above, and further in view of Hayakawa (US 3,553,134) .

Akisda discloses the upper electrode of the piezoelectric element connecting to a lead wire leading from the driver circuit, but fails to disclose how the lead wire is connected. It would be obvious to use any well known method of connecting a lead wire (fig. 1 element 6) to an upper electrode (fig. 1 element 3) of a piezoelectric element (fig. 1 element 2) such as using a solder bulk (fig. 1 element 5) as disclosed by Tetsuya (col. 1 line 55-60) for the purpose of connecting the lead wire.

7. **Claims 1, 3, and 5-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Akisada (US 6,183,426 B1) in view of Schleuniger (US 2004/0171970 A1). Akisada discloses a device to apply ultrasound to the skin comprising a housing (fig. 1 element 10), a driver circuit (fig. 1 element 20), a vibrator element (fig. 1 element 11), a horn (fig. 1 element 12) that is formed as an integral part with a rim (fig. 13 element 16E) creating a cavity (restrictor) (fig. 13 area between element 11E and 150) and carrying the vibrator on a mounting face which is capable of giving a first electrically equivalent impedance when loaded by the skin, and a second impedance when unloaded, a load detecting circuit (fig. 1 element 40) which is capable of providing a signal when detecting load, a control circuit (fig. 1 element 80) which is capable of stopping or reducing the driver circuit when the load detection is not received within a

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predetermined time period, and a motion detecting circuit (fig. 1 element 50) which is capable of monitoring movement of the vibration element (abstract). The ultrasonic device comprises a combined vibration mass as shown in fig. 13 comprising a structure 150 that restrains vibrations at a center portion (structure 150 is a ring, having a center hole). Akisda does not disclose the particulars of how the vibrational element 11 is configured. It would therefore be obvious to one skilled in the art to use any well know vibrational element such as disclosed by Schleuniger. Schleuniger discloses a vibrational element comprising a piezoelectric element (fig. 8 element 3) in the form of a circular disc having flat upper and lower end faces and upper (paragraph 0038) and lower (fig. 8 element 9) electrodes deposited on the upper and lower end faces wherein an electric pulse is applied across the upper and lower electrode to actuate the vibrational element. The electrodes can be in different forms such as having a center opening (fig. 7b element 27) or having a diameter smaller than the piezoelectric element and being divided by at least one slit into a plurality of identical segments, the slit extending diametrically, uncovering the center portion (having a center opening) and uncovering a diametrically extending slit portion of the piezoelectric element (fig. 7a). It would have been obvious to use the vibrational elements of Schleuniger in Akisda for the purpose of setting a depth of penetration of the therapeutic signal (paragraph 0025 of Schleuniger).

Allowable Subject Matter

8. **Claims 4, 8 and 9** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACQUELINE CHENG whose telephone number is (571)272-5596. The examiner can normally be reached on M-F 10:00-6:30.

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Chen can be reached on 571-272-3672. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jacqueline Cheng/
Examiner, Art Unit 3777

/Tse Chen/
Supervisory Patent Examiner, Art Unit 3777